

REMARKS

Favorable reconsideration of the subject application, as amended above, is respectfully requested in view of the following comments.

To clarify the record, claims 9-12 and 14-29 are pending in the subject application. We bring to the attention of the Examiner the he incorrectly states claim 9 and 14-18 are rejected; and claims 10-12 and claims 19-29 are withdrawn. Claim 12 was canceled through a Preliminary Amendment when the application was filed. Also, claim 13 was cancelled by amendment of August 27, 2004 even though in the remarks section of the final action claim 13 is referred. Claim 9 is amended herein to more specifically define the claimed invention. In particular, claim 9 has been amended to provide amino acid sequence structure of the claimed polypeptides and define which amino acids within SEQ ID NO: 8 may be altered. This amendment is supported by the specification and in particular, Figure 4, which illustrates the conserved amino acid referred to in the claim.

In the final Office Action the Examiner rejected claims 9 and 13-18 under 35 USC § 102(b) as being anticipated by Whyard *et al.* In the response filed April 23, 2004, Applicants provided evidence (Devonshire *et al.*, Pesticide Biochemistry and Physiology (2003) 76:1-13) that the enzyme disclosed in the cited prior art is not the same as that disclosed and claimed in the present application. The Devonshire article was cited merely to establish a universal fact concerning the physical properties of the enzyme disclosed in the prior art cited by the Examiner and therefore, its availability as prior art is not an issue. *In re Wilson*, 311 F.2d 266, 135 U.S.P.Q. 442 (CCPA 1962)). However, the Examiner refused to consider the evidence because the date of the published is after the filing date of the subject application. Subsequently, during a telephonic interview, the Examiner stated that he had reconsidered his position concerning the

availability of Devonshire *et al.* as evidence of the patentability of the claimed invention, and agreed to withdraw the rejection in view of the evidence.

It is respectfully submitted that the Devonshire article clearly demonstrates that the claimed enzyme is distinct from that disclosed in Whyard *et al.* Accordingly, the rejection of claims 9 and 14-18 under 35 U.S.C. § 102(b) is respectfully traversed.

Claims 9 and 14-17 stand rejected under 35 U.S.C. §112. The Examiner states that the specification does not provide an enabling disclosure of the claimed invention. In particular, the Examiner asserts that the specification does not provide an enabling disclosure for polypeptides having 75% sequence identity with SEQ ID NO:8. This rejection is respectfully traversed as follows.

The claims are directed to recombinant enzymes that have been engineered to have an amino acid sequence that retains the conserved amino acid sequence of SEQ ID NO:8, but which has a specified amino acid at position 251 and allows for variability in the sequence at non-conserved sequences. Conserved/non-conserved sequences of SEQ ID NO: 8 are shown in Figure 4, and enzymes that meet the claims requirements are shown as having the ability to hydrolyze carboxylester organophosphates or dimethyl-oxon organophosphates. That is, polypeptides that differ from SEQ ID NO:8 only at positions that are not indicated as conserved amino acids in Figure 4 and which have at least 75% sequence identity with SEQ ID NO:8 have the claimed properties. Examples of such polypeptides exist in nature, and others can readily be engineered using the information in Figure 4 as a guideline.

The specification provides the sequence of the malathion resistant enzyme, discloses which amino acids in the sequence of malathion carboxylesterase are conserved (Figure 1 and Figure 4), and teaches which amino acid/position is for necessary malathion resistance. Thus,

the specification teaches one of skill in the art all that is necessary to obtain recombinant malathion resistant carboxylesterases that have the claimed sequence identity with SEQ ID NO:8 and which hydrolyze carboxylester organophosphates and/or dimethyl-oxon organophosphates. As such, the specification provides an enabling disclosure of the claimed invention.

Accordingly, the rejection of claims 9 and 14-17 under 35 U.S.C. §112, first paragraph.

It is respectfully submitted that the present application, as amended above, is in condition for allowance, an early notification thereof being earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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